

REMARKS

Claims 1, 4-8, and 11-15 are pending in the present application upon entry of the present amendment. Claims 1 and 8 are currently amended by incorporating therein Claims 3 and 10, respectively. Claims 3 and 10 are accordingly canceled, and Claims 16-26 remain withdrawn.

In the instant Office Action, Claims 1, 3, 4, 6-8, and 10, 11, 13, and 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chung, et al. (U.S. Patent No. 6,836,070, hereinafter “Chung”) in view of Moser (U.S. Patent Application Pub. No. US2003/0148139, hereinafter “Moser”) and Chopra (U.S. Patent No. 6,413,858, hereinafter “Chopra”). Additionally, Claims 1, 3-8, and 10-14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Graff, et al. (U.S. Patent No. 6,492,026, hereinafter “Graff”) in view of Moser and Chopra. Claims 1, 3-5, 7-8, and 10-15 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Silvernail (U.S. Patent No. 6,576,351, hereinafter “Silvernail”) in view of Moser and Chopra. For at least the reasons discussed below, Applicants respectfully request these rejections be withdrawn.

In particular, not one of Chung, Graff, Silvernail, Moser, or Chopra teaches or suggests at least a barrier comprising a material, the composition of which varies substantially continuously across a thickness thereof where the barrier comprises an organic material and an inorganic material, as claimed in independent Claims 1 and 8. In other words, the barrier comprises both an organic and an inorganic material wherein the

compositions of the inorganic and the organic materials vary substantially continuously across a thickness of the barrier.

The examiner admits in the Office Action that Chung, Graff, and Silvernail each do not teach (a) “the composition of the organic polymer layer should vary substantially continuously across the thickness of the composite”, and (b) “the composition of the inorganic layer should vary substantially continuously across the thickness of the composite”. For each rejection based on Chung, Graff, or Silvernail, the examiner relies further on Moser to show (a) and on Chopra to show (b).

However, it is important to note that the issue is not the composition of one of the organic material or the inorganic material varying substantially continuously across the “composite”, rather the issue is the composition of the organic and the inorganic material varying substantially continuously across the “layer”. Independent Claims 1 and 8, as amended by including the limitations of Claims 3 and 10, respectively, require that “one of said diffusion-inhibiting barriers comprises a material, the composition of which varies substantially continuously across a thickness thereof, and wherein compositions of regions across a thickness of said at least one diffusion-inhibiting barrier are selected from the group consisting of organic materials and inorganic materials.

Moser cannot meet either (a) or (b) as Moser requires “metal-containing particles . . . formed as individual grains or as a conglomerate of several grains” (*see* [0011]) in an organic layer matrix. Therefore, neither the inorganic metal (since they

are discrete grains or conglomerates of several grains) or the organic layer matrix (where there is no mention of a varying composition or the organic at all) has a “composition . . . which varies substantially continuously across a thickness thereof” as required by independent Claims 1 and 8. Therefore, Moser does nothing to overcome the deficiencies of either of Chung, Graff, or Silvernail.

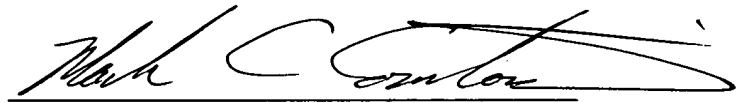
Chopra cannot meet either (a) or (b) as Chopra teaches a graded metal nitride layer (*see* Fig. 8) between a metal nitride layer and a metal layer (*see* col. 2 ll. 27-33). There is no mention of an organic and no mention of a layer that includes both an organic material and an inorganic material, let alone a layer having a “composition . . . which varies substantially continuously across a thickness thereof”. Therefore, Chopra does nothing to overcome the deficiencies of either of Chung, Graff, or Silvernail.

Accordingly, withdrawal of the rejections of independent Claims 1 and 8 and allowance of Claims 1 and 8 is respectfully requested. Additionally, withdrawal of the rejections of dependent Claims 4-7 and 11-15 and allowance of Claims 4-7 and 11-15 is respectfully requested without reference to the additional patentable limitations contained respectively therein.

CONCLUSION

In view of the above discussion, it is respectfully submitted that the present application is in condition for allowance, and an early and favorable consideration of this application is therefore requested.

Respectfully submitted,



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